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The Citrus Industry

FLORIDA STATE HORTICULTURAL SOCIETY

Closing a most successful meeting at Tampa on Nov. 3, the Sixty-Second Annual Meeting of the Florida State Horticultural Society elected a set of officers and directors of such prominence in Florida Horticulture that the continued success of the Society is assured. Officers named were:

Leo H. Wilson, Bradenton, President.

Dr. E. L. Spencer, Bradenton, Secretary.

Lacy Tate, Winter Haven, Editing Secretary.

Lem P. Woods, Tampa, Treasurer.

Ralph H. Thompson, Winter Haven; Bert Livingston, Tampa; Dr. F. S. Jamison, Gainesville, Associate Secretaries.

Board of Directors: Frank L. Holland, Winter Haven; Dr. J. R. Beckerbaugh, Bradenton; Dr. F. E. Gardner, Orlando; R. S. Edsell, Vero Beach; H. A. Thullbery, Lake Wales; Jack Faircloth, West Palm Beach, and George Cooper, Princeton.

The meeting was one of the most largely attended and most interesting held in recent years, attesting the recognition by growers of the great work being accomplished by this Society.

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... and what to do about it!

Most agricultural scientists will tell you that Nature does about 60% of everything that can be done to make a profit out of any farming operation. The best that man can do lies within the range of the other 40%.

The influence of root stock, proper pruning and cultivation are all very important. That's why it is so extra smart to do everything in your power to develop the right program of feeding and insect control.

No one program is suitable for every grove—or even all parts of the same grove. Conditions vary widely in various parts of the State.

To get the quality fruit year in and year out that pays off best at the market—consult your Wilson & Toomer Representative. He lives in your part of the country. He knows climate and soil conditions. He's also a trained citrus man. He can suggest the proper use of IDEAL Fertilizers and FASCO Insecticides and Sprays that will make the best quality fruit for you.



WILSON & TOOMER
FERTILIZER COMPANY

JACKSONVILLE, FLORIDA

Citrus Insects . . . For November, 1949

J. T. GRIFFITHS, JR., AND
W. L. THOMPSON
CITRUS EXPERIMENT STATION
LAKE ALFRED

Up to the last part of October very few reports of heavy purple mite infestations have been received at the Citrus Experiment Station. We have had several reports where growers were dusting or spraying for purple mite control in late October due to the fact that numerous eggs and some insects were present, but these have been the exception rather than the rule, and it is anticipated that we are entering November with a relatively low purple mite population throughout the state. However, the life cycle is short and if weather conditions are favorable mites can build up into serious proportions before the end of November.

Between the years of 1939 and 1943, November was the month in which purple mites did considerable damage to citrus trees. Whether weather was the primary factor or not we do not know. We do know that cool nights and warm days plus dry weather seem to be a combination which results in the build-up of purple mites. No one can satisfactorily predict what the weather will be like through November. However, if conditions are favorable, it is to be expected that purple mites will increase in many groves.

With these facts in mind checks of grove property should be made in order to determine what the potential situation on purple mites will be for any individual grove. If mites are at all common (10-15% of the twigs or leaves infested it is recommended that control measures be planned. Too often in the past growers have waited until leaf drop begins to occur before miticides are applied. As a general sort of recommendation it is suggested that wherever it is necessary to spray or dust sulfur for rust mite control even though only a few purple mites are present, that DN should be included in this application. DN Dry Mix may be used at the rate of 3 1/3 lbs./500 gal. tank or may be used as a 1 percent DN sulfur dust. It should be noted here that dusts in the spring of

1949 were not always successful. This was probably due to two factors: not enough dust was used and the application was made only after large populations of mites were present. It takes as much dust as spray to do a good job.

In checking groves for purple mite infestations particular attention should be attached to the late summer and fall flushes of growth. It is on these that mites are most apt to occur. Adults will

be found generally on the upper surface of the leaves and eggs will be found laid along the midrib and particularly around the petiole of the leaf. One method of checking for purple mites is to look for the typical greyed effect which they produce at the petiole end of the leaf first. When mites are in any abundance eggs and mites will both be found on twigs as well as leaves. In the case of purple mites (Continued on Page 17)



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The Florida Citrus Commission

BY ROBERT C. EVANS, MANAGER,
FLORIDA CITRUS COMMISSION, AT MEETING OF FLORIDA
STATE HORTICULTURAL SOCIETY

I am glad to have the opportunity today to tell you something about the work of the Florida Citrus Commission. Although the Commission has just completed its fourteenth year of operations, there are no doubt many growers who have only a vague knowledge of what it is doing. We feel that all growers should be familiar with its activities and we welcome the opportunity to discuss the subject with you.

The Commission was established by Act of the Florida Legislature in 1935. The leaders in the citrus industry at that time recognized the need for one organization to handle the various regulatory measures. It was also recognized that there was a need for an advertising and merchandising program to assist in the marketing of increasingly larger crops. The Commission was established under the State laws in order that the police powers of the State might be available for enforcement of the program.

There are 12 members of the Commission who are appointed by the Governor. These members must be citrus growers and derive a major portion of their income from growing citrus. Some of them are also engaged in the shipping and processing of citrus fruits; therefore, all segments of the

citrus industry are represented. During its fourteen years of operations, more than 50 growers have served on the Commission. These men devote most of their time to the business of operating the Commission and they receive no pay for this work.

The Commission's operations cover three general fields of activity: (1) Advertising and Merchandising, (2) Research, and (3) Regulatory and General Activities. Probably the most important of these is advertising and merchandising because it is through this work that the Commission extends the most direct assistance to the industry in the marketing of its crops. The Citrus Code provides for an assessment of 2 cents per box on oranges, 3 cents on grapefruit, 4 cents on limes and 5 cents on tangerines. This provides a fund of slightly over 2 million dollars annually, most of which is expended for advertising and merchandising activities.

At the present time the Commission has a force of 25 Sales Service representatives stationed throughout the Florida marketing territory. These men have been schooled in the "know-how" of merchandising. Their principal objectives are (1) to secure maximum distribution for Florida citrus products in wholesale and retail

outlets in order to meet the consumer demand which the advertising program is expected to develop, (2) secure for Florida citrus products prominent display at the point of purchase, and (3) encourage dealer support for these products through regular and prominent listing in his own retail advertising and through active promotion by store personnel.

In order to obtain maximum distribution for Florida citrus products our merchandising men constantly remind the trade of (1) the **high quality** maintained through rigid inspection, (2) the proved **volume turnover** possibilities and (3) the **consistent profit** to be derived. The men are assisted in this work by the use of a Sales Portfolio prepared in advance of each season's campaign. This portfolio contains merchandising ideas that have proven successful and copies of the various advertisements that will appear from time to time, including names of publications and insertion dates. This is a valuable aid in persuading dealers to plan their local advertising so as to obtain maximum benefits from the Commission's advertising program.

There is an axiom among merchandising men that "the more it shows, the quicker it goes." In line with this, the Sales Service representatives devote a substantial

part of their time in arranging for Florida citrus fruits and products to be displayed at the most desirable locations within the stores. Various types of displays known to be sure-fire volume builders are demonstrated and recommended. Tying-in directly with this activity is the use of attractive and colorful store display materials. During the 1948-49 season more than 2 million pieces of individual point-of-sale display material were used.

In the past these merchandising men have put on demonstrations of various citrus products such as orange juice and frozen concentrate. This year each man is being supplied with an attractive juice bar and it is contemplated that the number of demonstrations will be greatly increased.

The number of sales service men has been increased from 17 last year to 25 this year, but even this expanded force is not sufficient to service all retail stores. However, by contacting the headquarters of corporate chains, voluntary groups, super markets and the large wholesale units, a wide coverage of outlets is obtained. Last season more than 22,000 individual contacts were made covering the leading independent, co-operative and chain store retail outlets.

The men forward reports to the Lakeland office each week where they are condensed and mailed to all sales managers in Florida. These reports cover condition and prices of fruit, juices, and competing products as well as general market conditions and reaction of the trade. We have received many letters from the industry commenting on the value of this service. From time to time the men are requested to make surveys to obtain special information needed by the industry.

At this point I should like to mention the Commission's Convention activities. We have one man who devotes his entire time to attending conventions and demonstrating Florida orange juice and other citrus products. Such demonstrations are for the most part limited to conventions of doctors, dentists, nurses, dietitians, nutritionists, and groups in the food fields such as National Association of Retail Grocers, and other similar organizations. Last year

we served approximately 66,000 cups of citrus juice at these conventions. In addition, we served approximately 100,000 cups of juice at special events and in store demonstrations. We receive requests for such demonstrations from many conventions where we cannot participate because of personnel and budget limitations.

You have all seen the Commission's attractive and colorful advertisements in leading national publications such as Life, Saturday Evening Post, Ladies' Home Journal, Better Homes & Gardens, Mc-Calls and Farm Journal. These publications reach millions of families. It has been said that in order to obtain and hold a prospective interest, a salesman should base his appeal primarily on health, happiness and financial gain. Most of our advertising hammers away at these points. Our big story, of course, is the health value of citrus fruits and along with it we stress the big values available at the neighborhood stores in Florida citrus fruits and products. The health values and the attractive prices at which citrus fruits and products have been available in the past are, in my opinion, the principal reason for consumer demand keeping pace with the tremendous increases in production.

The Commission has budgeted for the 1949-50 season approximately \$1,445,000.00 for consumer advertising. This includes \$1,335,000 for the basic campaign in magazines and newspapers, \$65,000 in professional publications with circulation in the medical, dental, nutritional, dietetic and other allied fields, and \$45,000 for general publicity where the principal effort is to supply the food editors of magazines, newspapers and radio stations with citrus material. Through these media we obtain many thousands of dollars of free space.

The Commission from time to time prepares for general distribution booklets designed to increase the consumption of citrus fruits. During the 1948-49 season 150,000 colorful consumer recipe booklets entitled "Florida Citrus Fare" were produced and on the basis of the present demand, the supply will soon be exhausted. It has been a very popular item. We also produced for distribution to dietitians, nutritionists, home economists and teachers a 40 page

booklet entitled "Citrus Fruits and The Nation's Health." About 40,000 of these booklets have been mailed to the profession and we are continuing to receive daily requests for copies. We have also just completed production of a 32 page booklet entitled "Citrus Fruits In Health and Disease." A copy of this booklet will be sent to every physician in the United States. The recommendations of these professional groups to their patients and clients have an important influence on the usage of citrus fruits and products.

During the past several years the Commission has subscribed to market research services from which a wealth of vital market information is made available to the industry. The A. C. Nielsen Company supplies data on sales, purchases, prices, distribution and inventories of citrus juices and frozen orange concentrate. The Industrial Surveys Company supplies information on fresh and canned citrus fruits and competing fruits and juices. In addition to supplying valuable information to the industry, these reports serve as a guide to the Commission and its advertising agencies in planning advertising programs, particularly since the reports supply the various data by geographical areas, city sizes and store types.

Now, let's turn to the Commission's Research activities. Under the citrus laws up to 5 percent of the income may be used for citrus research. On the basis of present income, this provides approximately \$100,000 a year for this activity. The Commission has a Research Director and 12 research employees. This department is constantly working to develop new products and to improve the processes for the various citrus products already in production. Research is one field of activity where it may take years to come up with something of great value to the industry.

I believe that the outstanding accomplishment of our Research Department has been its work on frozen orange concentrate. Our men worked on this for several years before developing the process now in use. Their patent on this process was assigned to the U. S. Department of Agriculture as a public service patent, number 2453109. I believe that this one development may eventually more than justify all the funds ever

expended by the Commission for research.

During the 1948-49 season approximately 10 million boxes of oranges were utilized for frozen orange concentrate. Industry leaders estimate that 20 to 25 million boxes will be utilized for frozen concentrate in the 1949-50 season. This would amount to 35 to 40 percent of our total orange production. Production of this product began in a modest way about 4 years ago when 225,000 gallons were produced. Last year 10 million gallons were produced. Sales at the retail level have skyrocketed and it is believed that the surface has just been scratched on the potential market. Information developed by one of the market survey services to which the Commission subscribes shows that 51% of all stores now have facilities for frozen foods. This compares with 41% about 9 months previously. This expansion is generally credited to the popularity of the frozen orange concentrate which is now by far the leader in sales volume.

In June-July 1949, 37 percent of all U. S. retail stores purchased one or more brands of orange concentrate. This compares with 16 percent last October-November and 26 percent in February-March. In June-July 1949 this product accounted for 19.6 percent of the volume of the total citrus juice market which was a larger share than for blended orange and grapefruit juice. On a dollar volume basis the product accounted for 25.1 percent of the consumer's dollar which was second only to orange juice. I quote these figures simply to give you some of the reasons why many growers and processors are so optimistic about the future of this product and what it may mean to the industry. I believe there is general agreement that the development of the production process for this product is one of the outstanding achievements of the Citrus Commission.

I will not attempt to enumerate all of the other projects with which our Research Department is now concerned. One of the more important is decay-control. We have been working on this for several years and have found two

or three compounds that control stem-end rot to a remarkable degree. However, before they can be used commercially they must be cleared as to toxicity and other properties by the Food and Drug Administration.

Most of you growers receive copies of the Spray and Dust Schedules each year. These schedules are prepared by the Better Fruit Committee which includes representatives of several research agencies and they are printed and distributed by the Florida Citrus Commission. Last year 20,000 copies were distributed.

The Citrus Code provides that up to 3 percent of the citrus advertising tax funds may be expended in the handling of transportation problems and to employ rate and transportation experts to handle these problems. For a number of years the Commission has employed the Growers and Shippers League of Orlando to handle this work. This agency through its action in obtaining reductions in freight and icing rates and in obtaining delays and suspensions in proposed increases in such charges has saved citrus growers several million dollars. It has obtained modifications and cancellations of restrictive orders governing the use of refrigerator cars, diversion privileges, and loading requirements. This activity of the Commission has been worth many times its cost to the industry.

In addition to the foregoing activities, the Commission is charged with the responsibility of promulgating and administering rules and regulations governing various phases of the citrus industry's operations, and also engages in certain general activities for the purpose of benefitting the industry. The rules and regulations cover the following:

1. Establishing grade standards for fresh and canned citrus.
2. Prescribing methods of testing and sampling for maturity and grade inspection.
3. Registration of labels.
4. Prescribing containers to be used for shipping citrus fruits.
5. Marking of containers.
6. Specifications for use of Color-Added.
7. Stamping of citrus fruits.
8. Establishing embargoes against shipment of freeze damaged citrus fruits.
9. Handling of applications for

licenses by citrus dealers.

10. Coloring Room practices.

11. Safeguard against the canning or processing of unwholesome or decomposed fruit.

The Commission investigates all applicants for license as a citrus fruit dealer. Last season 1,068 dealers were licensed. Each citrus dealer is required to post a survey bond which is designed to afford some protection to growers against improper returns and failure to carry out contracts by citrus dealers.

Through the years the Commission has intervened in various matters affecting the welfare of the citrus industry. Throughout the war years it represented the industry in negotiations with the government on ceiling prices, war production board orders, transportation and other matters. From time to time various issues arise in which the Commission is requested to negotiate for the industry. We have recently been active in requesting our Congressional delegation and all members of the Senate Agricultural Committee to incorporate in the new agricultural bill provisions under which more funds will be available for the purchase of citrus fruits or citrus products if and when the occasion for assistance arises.

Many of the activities of the Commission have been in the nature of those performed by a service organization. After all, the value of the Commission is measured by its usefulness to the industry. It has been the policy of the Commission to assist the industry in every way possible in the solution of its problems. Differences of opinion among the various factors in the industry are often resolved at the Commission meetings. These meetings serve as a forum where any grower, shipper or canner may present problems affecting the industry. As a rule the Commission takes whatever action the majority of the industry desires if it is considered feasible, practical and in conformity with the citrus laws and regulations.

If you could spend a few months in the Commission office you would be amazed at the number of inquiries received from persons all over the country. Many of these persons request information concerning the citrus industry or its products. One party wants

(Continued on Page 16)

The Florida Citrus Mutual

BY ALDEN M. DRURY, GENERAL MANAGER
At MEETING FLORIDA STATE HORTICULTURAL SOCIETY
WEDNESDAY, NOVEMBER 2, 1949

We are just starting another harvesting and shipping season for Florida citrus fruits. Everybody is asking questions about the prospects, but almost everyone believes this is going to be a good and profitable season. They just *feel* that way but aren't sure of facts to support that feeling. I'm going to give you some of those facts.

Recently the United States Department of Agriculture released its forecast of production for all areas for the 1949-50 crop. I quote their figures, together with actual production for the last season, to show where Florida stands in relation to the national supply.

	1949-50 Forecast	Last Season
Florida Oranges—		
Valencias	28,000,000	26,300,000
Early & Midseason	33,000,000	32,000,000
Total	61,000,000 boxes	58,300,000 boxes
California Oranges—		
Valencias		8,398,000
Navel	15,700,000	28,500,000
Total		36,898,000 boxes
Florida Grapefruit—		
Seeded	13,000,000	15,500,000
Seedless	10,000,000	14,700,000
Total	23,000,000 boxes	30,200,000 boxes
Texas Grapefruit	4,800,000 boxes	12,000,000 boxes
Florida Tangerines	4,400,000 boxes	4,400,000 boxes
Apple Production	129,000,000 bushels	88,000,000 bushels

According to reports from California, there are about 5,000 cars of Valencias remaining for shipment, which means another 4 to 6 week's supply. Average sizes are extremely small and quality is poor. California Navels are reported to be of good sizes and good quality but somewhat delayed in maturity. They will not begin to move in volume until after the middle of November. The Crop Reporting Service also shows a very heavy pack of apples in storage and disastrously low prices for that commodity which is highly competitive with citrus. The evidence is not all favorable, and so we need to look at both sides.

Let's look at the dark side first. I am going to list a few of the things that can upset the picture and spoil our prospects if they are not watched carefully and guarded

against.

1. We lost a lot of perfectly good fruit as a result of the hurricane. We cannot recover that loss, but can prevent more loss by insisting that fruit going to market is of good quality and worthy of repeat business. This will be especially true of early shipments.
2. We must not let prices reach exorbitant levels that will stifle demand and turn the consumer to other commodities or to citrus from other areas.
3. We must try in every way to keep down our costs of production, packing, processing and

for canning industry.

Now, let's look on the bright side.

1. Our Florida Fruit is reported to be of fine appearance and excellent quality; it is a little later in maturity than normal, which means it will miss some of the competition from other producing areas.
2. We have a real national shortage of grapefruit for the fresh fruit market, and prices for this variety will probably be higher than for oranges. This is only a fair compensation for the grapefruit growers who lost so heavily in the hurricane.
3. Consumer income remains high and buying power warrants good prices for citrus, unless too badly affected by strikes in major industries.
4. There is the continuing effect of advertising to convince the public that they require citrus for health and as part of a balanced diet.
5. We are close to the large centers of population which means a favorable freight rate structure compared to the other major producing areas.
6. We have developed and perfected frozen concentrates which will take a large quantity of fruit—perhaps 20 million boxes of oranges this year, or nearly double last year's pack of this item that commands ready consumer acceptance.
7. There isn't any large carry-over of canned juices, or of concentrates, on the grocery shelves, or in warehouses either in the markets or at the canneries.
8. Florida Citrus Mutual is activated and functioning to stabilize markets and improve prices. What about Mutual? Why is it a favorable factor?

Florida Citrus Mutual is a State-wide organization of citrus growers banded together under authority of the Capper-Volstead Act for the purpose of stabilizing the market and improving the financial returns of its 6,500 grower-members. These growers produce almost 80% of all the citrus fruits

transportation which can eat up all the profits.

4. We must see that the quality of frozen concentrates is maintained at a high level, and prevent over-enthusiasm from leading us to lower our standards, which will discredit this product that offers so much promise.
5. We can rush fruit to market without regard to the demand, driven by fear of declining prices, cold weather, or another hurricane, forgetting that such fears and disorderly marketing will surely mean financial losses.
6. We can become involved in legislative upheavals that will destroy confidence in the stability of the citrus industry.
7. Coal and steel strikes — with loss of buying power and possible short supply of tin plate

of all varieties grown in the State of Florida.

To provide ample facilities to handle the 60 million or more boxes produced by its members, Mutual has more than 250 handlers, both fresh fruit, canners and concentrators, under contract with it. These handlers and processors have agreed to abide by Mutual's recommendations as to f.o.b. prices and shipments to the markets. In other words, Mutual expects to correct the adverse factors of disorderly marketing and exorbitant and widely fluctuating prices that can nullify most of the favorable factors mentioned above.

Too high prices stop sales and too low prices stop shipments. In both cases the grower suffers.

Mutual aims to correct these situations and prevent grower losses. It offers the medium through which the growers and handlers can work together to correct those abuses and effectively stabilize the markets. Through Mutual, they can supply the consumers' needs at a price they can afford to pay, and at the same time realize for themselves enough money to again make the growing and handling of citrus in Florida a sound and a profitable business.

What Has Florida Citrus Mutual Done?

Florida Citrus Mutual, because of general recognition by growers, shippers, bankers, civic groups, distributors and handlers in the markets, of the absolute need for correction of the chaotic conditions that have obtained so long, has convinced growers who produce over three-fourths of the entire crop that it is the agency they have been seeking and that it has the power, through concerted effort, to do those needful things referred to above.

Mutual has already demonstrated its value to the Florida grower through its recommendations and allocation of fresh fruit shipments, on a voluntary but industry-wide basis, during the latter part of the 1948-49 marketing season. Control of shipments by this method following the unrestrained flood of fruit and extreme break in the market immediately after the California and Texas freezes resulted in many millions of dollars of increased revenue to the growers of Florida.

How Will Florida Citrus Mutual Accomplish Its Objectives?

Florida Citrus Mutual's plans and

objectives are real and solely in the interest of stabilizing the markets, the economy of the State and industry, and the financial security of the grower.

To accomplish this, an organization is being perfected to accumulate data on the markets, production, prices, supply and demand. The mechanics of an orderly shipping program for Mutual members is being established to render intelligent decisions on the four basic objections already announced, namely:

1. Regulation of the volume of fresh fruit shipped each week in interstate channels.
2. Control of offerings in the terminal markets—which should result in a consistently improved price level, as well as an increase in the volume of sales in those markets.
3. Determination of the fair f.o.b. valuation of fruit for fresh fruit sales.
4. Determination of a fair on-tree price for fruit to be sold to canners, concentrators and processors.

The data on which the above decisions are based will be made available to the handlers and growers to assist them in working out their operational plans. The information should be helpful to the handlers under contract with Mutual in fitting their activities into the picture in accord with the suggestions and recommendations of the fresh fruit sales Manager and his Industry Advisory Committee; (now functioning), those released by the processed fruit sales Manager and his Industry Advisory Committee; and the general price information governing on-tree prices if and when such pricing becomes necessary to stabilize the market.

With this information, Mutual and its contract handlers, even though they control only 75-80% of the production, can make vast strides in improving and stabilizing the marketing practices of the entire Florida industry. How much more effective it would be with the entire industry following the same sort of program.

Many other powers and activities are authorized in the Charter and By-Laws. They involve questions of concern to all growers in the industry. Some of them—in fact, most of them—existing 20 years ago are still with us: freight rates, standardization of containers, re-

search in production and utilization, advertising, financing, and others of a similar nature.

So long as other industry-wide agencies are handling these problems satisfactorily, there is no need for Mutual to invoke its authority. Mutual can accept their findings and make them a part of the information handled through its clearing house facilities.

There is one problem, however, with which Mutual can and should concern itself at once. I refer to some plan of co-insurance against disaster—freeze, hurricane, fruit flies, tristeza, etc. This idea is not new. It has been advanced at meetings of Mutual grower-members, but it has not been followed through because the Mutual Board of Directors has rightly followed a policy of "first things first" and has been busy perfecting its organization and the basic contracts under which grower, canner and shipper can sit down together to solve their common problems.

If such a plan can be worked out and put into practical operation, it will be a wonderful thing for the grower. Our industry staggers under the blow of the August 26-27 hurricane. Losses vary by area and by variety. Wouldn't it have been worth a few pennies per box as premium payment on an insurance policy underwritten by Mutual for its own members if such a policy could have partially reimbursed those growers who suffered losses? I believe this plan merits study. At all events, I personally prefer to try to work out a solution within our own control rather than rush to the government for aid.

There arises also the problem of protection to the individual grower-member of Mutual who has not had a chance to move an equitable share of his crop due to controlled rate of shipment, should some midseason disaster strike and he suffer loss. I do not refer here to the grower who belongs to a cooperative association because most of them have pooling arrangements to take care of equities amongst their growers. I have reference to the member of Mutual who sells his fruit to various Mutual contract handlers. This problem also merits careful study.

Plans should be made also for handling the problem of surplus production through some sort of pooling arrangement if and when

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The Citrus Industry

with which is merged The Citrus Leaf
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FEDERAL COURT DENIES INJUNCTION

A three judge Federal Court sitting at Orlando refused the petitions of a group of growers and another group of canners seeking to restrain enforcement of the new citrus code. That the decision of the lower court will be appealed to the United States Supreme Court appears to be certain. Until the higher court has acted on the matter, the provisions of the code will be in effect and those in authority declare that those provisions will be strictly enforced.

For the most part, the growers bringing the action were owners of Hamlin groves rooted on rough lemon stock and located on the sandy soils of the Ridge section and who claimed that the code operated to prevent shipment of their product and resulted in great monetary loss.

Canners protested that provision of the code requiring grade labeling of their product.

From the time that the provisions of the code were first made public, these groups have consistently opposed it and fought against its passage by the legislature.

It is to be hoped that early action may be taken by the United States Supreme Court so that the citrus atmosphere may be clarified and growers, shippers and canners may know just where they stand and how they must operate.

"BIG MONEY" BELIEVES IN FLORIDA CITRUS

That "Big Money" has faith in the future of the Florida citrus industry has again been demonstrated on a large scale.

Lykes Brothers, owners of great steamship lines, pioneers and developers of vast cattle interests, owners and operators of packing houses, have now entered the citrus field by the investment of \$5,000,000 in Florida citrus groves and the vast Pasco Packing Company at Dade City, world's largest concern of the kind.

In recent years, even during the period of low prices when Florida grove owners were operating at a loss, "Big Money" has been purchasing old groves and planting new ones. The investment of Lykes Brothers is ample evidence that "Big Money" has faith in the future of the Florida citrus industry.

On-tree buyers of Florida oranges and grapefruit, who had been conspicuous for their absence early in the season, are now reported to be active throughout the citrus belt. Growers as a rule have been rather reluctant to sell.

SEASON OFF TO GOOD START

In sharp contrast to the past two seasons, the present citrus shipping season got off to a good start, with prices for both oranges and grapefruit bringing exceptionally good prices. With a short crop of grapefruit in Texas and unpopular small sizes of oranges from California, Florida growers have been confronted with much weaker competition than for many years. This has been reflected in the auction markets where Florida oranges have been selling at higher prices than the California fruit and Florida grapefruit selling at a premium over the Texas offerings.

The U. S. Bureau of Agricultural Economics at Orlando in its report for October 15 lists on-tree prices of Florida oranges at \$2.30, as against 98 cents on October 15, 1948. Grapefruit on-tree price at the same date was \$2.39, compared to 49 cents on the same date a year ago. Two years ago the on-tree price of Florida oranges was 63 cents and of grapefruit it was 26 cents. Looking at these comparative government figures, the Florida citrus grower is much encouraged at the present picture and over the future outlook. Of course, it is not to be expected that auction prices of oranges at \$6.00 per box and grapefruit at \$7.00 will continue, but at least we have made a good start and reports are that the fruit has met with ready acceptance by consumers.

With control of distribution by Florida Citrus Mutual which may soon be called into service should conditions warrant, Florida citrus growers are justified in anticipating a profitable season for the first time in some years.

HORTICULTURAL SOCIETY MEETS

As this issue of The Citrus Industry goes to press, the Sixty-Second Annual Meeting of the Florida State Horticultural Society is in session at Tampa.

For more than sixty years this organization has played an active and important part in the development of horticultural pursuits of the state, particularly in the expansion of the citrus industry.

This year an impressive program is being carried out. Some of the papers presented at the meeting are printed elsewhere in this issue and others will be carried in future numbers of this magazine.

Announcement that the Federal Government will subsidize the export of oranges to European nations under the Marshall Plan comes as good news to Florida orange growers.

Reports of field men who have been spending much of their time in the groves, is to the effect that growers are producing a crop of high quality and excellent appearance.

The Growers and Shippers League of Florida announces that Southern rail lines have granted reduced rates to most of the principal cities in Southern territory.

Citrus Odds And Ends...

It is my thought to set forth several items relating to citrus culture which have been collected throughout the years: in order that this information might be available to interested growers, and in the hope that those observations may be helpful to others. Special attention is called to the notes on creasing and **Psorosis**, since I believe these are the first mention in literature on the specific points relating to these diseases.

Creasing of Grapefruit:

Creasing of oranges is not uncommon, but in my forty-two years in Florida I have observed only one case of creasing of grapefruit. This was in a grove about twenty-five years old, just west of Fort Pierce. The soil in which these trees were growing appeared as though it had formerly been a swamp, or even a pond, which had been drained. This had occurred in only one year since the grove was planted.

There is very little information as to the cause of creasing in citrus fruits, and neither is a remedy available.

Psorosis:

Psorosis may be transmitted through the seed: It is known that **Psorosis** is a virus disease, and is usually spread by using infected bud wood. I have seen one case, however, which indicates that the virus is also transmitted through the seed. A grapefruit seedling was observed from the time it first came through the ground, until it was twelve feet high; or over a period of twenty years. At around ten to twelve years of age, five **Psorosis** bands appeared on the larger limbs. After a few years, however, these bands became less pronounced. It may be that they will disappear altogether in time.

Psorosis on the roots of trees: A grapefruit tree which was budded on sweet root stock was observed to be quite severely infected with **Psorosis**. Despite the fact that the infection was severe, the tree was in fairly good condition and had produced about five boxes of grapefruit the season it was removed. It is particularly interesting to note that in examining the roots of this tree, the same scaly bark condition as was present on the trunk and larger limbs of the

BY W. W. YOTHERS

tree, was found in many places on the roots. This, of course, would indicate that in most instances scraping and massaging the trunk of a **Psorosis**-infected tree would have little effect in eliminating the

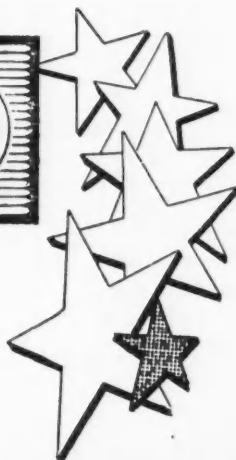
disease.

Although I have tried to get other growers to make examinations of the roots when they dug up **Psorosis**-infected trees, little or no interest has thus far been manifested, despite the fact that it is

(Continued on page 14)

Fall Fertilizing is Very Important!

Whether the
season will remain open,
or whether
we're due for cold . . .
healthy trees will do better
For mid-season or late fruit,
use care in applying nitrogen.
Too little rather than too much
is better for keeping fruit
in the high-quality class.
Quality fruit should
pay off this year
as never before.



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1947-48 Citrus Costs And Returns With Comparisons With Other Seasons . . .

ZACK SAVAGE

Associate Agricultural Economist
Agricultural Experiment Station

The Florida Agricultural Extension Service, including County Agents of citrus producing counties, cooperated with a number of citrus growers in obtaining 215 records on groves over 10 years of age for the 1947-48 season. An average of 218 records were obtained each season for the past 17 years, 1931-48. The acreage included averaged 7,498 acres and there were 7,654 acres in these groves in 1947-48. Approximately 2 percent of the bearing acreage figure of the State has been included in these records each season. Averages for this acreage are by no means taken to represent averages for the State as a whole. However, it is thought that trends in the averages of these groves are similar to the trends in corresponding averages for all bearing groves of the State.

Costs, returns, and other data on groves over 10 years of age, 1947-48 and 17-year average

	1947-48	17-year Average, 1931-48
Number of records	215	218
Total acres of records	7,654	7,498
Acres per grove	36	33
Average age	25	20
Number of trees per acre	61	60
Percent trees grapefruit	30	31
Boxes harvested per acre	321	198

Costs:

	Per Acre	Per Box	Per Acre	Per Box
Labor, power, and equipment	\$ 75.50	\$.24	\$ 34.61	\$.17
Fertilizer materials	56.63	.18	31.95	.16
Spray and dust materials	10.06	.03	5.92	.03
State and county taxes	8.86	.03	5.50	.03
Miscellaneous	7.33	.02	3.55	.02
Total operating costs	158.38	.50	81.53	.41
Interest on grove at 6 percent	39.79	.12	33.75	.17
Total cost without owner supervision	198.17	.62	115.28	.58

Returns:

Returns from fruit	136.41	.43	201.95	1.02
Net returns	-- 61.76	-- .19	86.67	.44
Returns above operating costs	-- 21.97	-- .07	120.42	.61

Boxes harvested for the 1947-48 season were the highest of the 17 seasons, 321 boxes per acre. The second highest season was 305 boxes in 1943-44. All other seasons averaged less than 300. The average number of boxes harvested per acre was 198 for the 17 seasons. The boxes harvested in-

creased materially as the period progressed. The average for the 5-year period—1931-36—was 125 boxes per acre, 176 boxes for the 1936-41 period, and 250 boxes for 1941-46. The average for the third period was double that of the first. Fruit prices during some seasons of the first period were low, resulting in some of the fruit re-

Distribution of Seasonal Averages of Boxes Harvested per Acre

Boxes per Acre	Number Seasons	Percentage	Cumulative Percentage
Less than 100	1	6	6
100 to 149	4	23	29
150 to 199	5	29	58
200 to 249	2	12	70
250 to 299	3	18	88
300 to 349	2	12	100
92 to 321	17	100	

maining unharvested. Other reasons contributing to the increase in number of boxes harvested include

decrease from the preceding season on a per-acre basis but was a decrease of 5 cents per box. These costs averaged \$31.53 per acre, or 41 cents per box, for the 17-year period. Such costs on a per-acre basis increased each season over the preceding for the 13 seasons, 1934-47, with the exception of two seasons, 1938-39 and 1939-40. On

the per-box basis the story was quite different, due to the increasing number of boxes of fruit harvested. Of the 6 seasons, 1938-44, there were 4 with operating costs at 30 cents, 1 at 31 cents, and 1 at 33 cents. Such costs for the 1944-45 season rose to 52 cents per box, due to an increase of 25 percent per acre in this cost over the previous season and a decrease of 26 percent in the number of boxes of fruit harvested. This decrease in fruit harvested was due largely to hurricane damage, chiefly in Polk and Highlands Counties.

Although operating costs per acre exceeded the 1931-32 costs, \$86.26, in 5 seasons of this 17-year period, such costs per box exceeded the 51 cents for that season in only 2 seasons, 1944-45 and 1946-47. The per-acre cost for the 1948-49 season was \$138.36, a decrease of 13 percent from the previous season.

Labor, power, and equipment costs made up 43 percent of the operating cost for the period. Fertilizer materials made up 39 percent, spray and dust materials 7, taxes 7, and miscellaneous costs the remainder, 4 percent.

Returns from fruit were \$136.41

increasing age of trees, better fertilization practices, increasing proportion of acreage irrigated, less damage from low temperatures, better grove care in general, and possibly other factors.

Operating costs were \$158.38 per acre, or 50 cents per box, in 1947-48. This was only a slight

per acre in 1947-48, the lowest since 1940-41. However, there were 8 of the 17 seasons with lower returns per acre. The price received for fruit in 1947-48 was 43 cents per box, the third lowest of all seasons. Returns from fruit averaged \$201.95 per acre and \$1.02 per box for the 17-year period. There were 12 seasons in which the per-acre returns were less than the average for the period and a like number of seasons in which the per-box returns were less than the average.

Yield and price determine the per-acre returns from fruit. High yields and high fruit prices resulted in pyramided returns per acre during the war years, so much so that the 5 seasons—1942-47—pulled the average for the 17 seasons above any of the other 12 seasons. Returns per acre for this 5-year period were more than 4 times that of either of the other 2 5-year periods.

Income above operating costs was the lowest in 1947-48 of the 17 seasons, the figure being a minus \$21.97 per acre. In other words, the returns from fruit lacked \$21.97 of paying operating costs. On a per-box basis the loss was 7 cents. Income above operating costs averaged \$120.42 per acre and 61 cents per box for the 17-year period. There were 5 seasons, 1941-46, with net incomes per acre exceeding the average for all seasons. These same 5 seasons and one additional, 1936-37, showed net incomes per box higher than the 61 cent average. There were 2 seasons, 1932-33 and 1947-48, when operating costs exceeded returns from fruit.

There was considerable difference between the average net returns per acre for the first 10 seasons, \$40.05, and the average for the remaining 7 seasons, \$235.23. The latter figure is about 6 times the former. Average returns above operating costs per box for the latter period were 326 percent of the former period (88 and 27 cents, respectively.) There was one season in each period with relative returns above operating costs.

Maintaining a substantial income above operating costs might be listed under 2 headings: (1) obtaining a higher price for fruit, and (2) lowering production costs. Some of the things that might be done under each of these head-

GET LARGER YIELDS

of quality citrus with water-soluble magnesia



Fruit production can be approximately doubled by the use of available magnesia as demonstrated by tests conducted over a period of years by the Lake Alfred Citrus Experiment Station on two seedy grapefruit plots.

Such results are being obtained by hundreds of growers who are using *Sul-Po-Mag* regularly to improve production in their groves.

Many Florida growers have used *Sul-Po-Mag* for years. During the recent shortages, *Sul-Po-Mag* supplied not only the water-soluble magnesia so necessary to the sandy soils of Florida, but also many thousand extra tons of essential potash, providing Florida growers with fertilizers in greater proportion than supplied in surrounding areas.

Few grove soils in Florida contain enough available magnesia for citrus. When magnesia deficiency is not corrected, the trees become

more sensitive to cold and drought and the fruit small, with low food value and poor taste.

The most practical, convenient and economical way to obtain magnesia is in its natural combination with sulfate of potash in *Sul-Po-Mag*. Both the magnesia and potash are in water-soluble form and immediately available to crops.

Many leading manufacturers are blending *Sul-Po-Mag* with the other plant foods to supply you the most productive and efficient fertilizers available today. When you buy fertilizer for citrus, vegetables and other crops, ask your dealer for a grade containing *Sul-Po-Mag*.



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GENERAL OFFICES: 20 NORTH WACKER DRIVE, CHICAGO 6

ings are here listed.

1. Obtaining higher price for fruit.
 1. Better job of selling.
 2. Get more of consumer dollar by lowering marketing costs.
 3. Compete for more consumer dollars for citrus through education, advertising, etc.
- II. Lowering production costs.
 1. Increase yield.
 - a. The application of the necessary amounts—According to productive capacity—of correct; constituted fertilizers at the right time.
 - b. Maintain soil acidity within proper pH range and see that adequate available calcium is present.
 - c. Hold down damage due to insects and diseases.
 - d. Remove low yielding trees and replace with trees of good strain and proven quality.
 - e. Maintain adequate moisture in soil.
 2. Hold costs, particularly for fertilizer materials, in line with productive capacity of trees.
 3. Perform necessary cultural operations only.
 4. Prune only as necessary.
 5. Where irrigation is practiced, apply the correct amount of water as efficiently as possible at the proper time.

CITRUS ODDS AND ENDS (Continued from page 11)

vious that the more information we can secure concerning the disease, the greater the likelihood of developing a cure. Up to this time, however, it would seem that the best method of treating Psorosis is to dig the tree out and plant a new one in its place.

Slow Decline (?)

In the midst of a grove was found a sweet seedling tree which showed, for want of a better term, a slowly declining condition. The foliage was sparse, and there was a considerable amount of dead wood toward the top of the tree. The tree was obviously "on the way out." As an experiment, about a ton of semi-rotted oak leaves was put around this tree. This treatment made it an entirely different tree, with abundant and healthy foliage, and to-

day, after several years, it shows no sign of dying. This experiment was not repeated on this tree, nor were other trees treated with the semi-rotted oak leaves.

Sulphur Injury:

Since 1935 I have been calling to the attention of numerous citrus growers the apparent fact that most of the injury following the application of lime-sulphur solution (and in some cases, sulphur dust), was not the fault or the result of the properties of the spray or dusting material, but that it was a condition of the fruit, itself. I maintained that wherever copper deficiency existed, lime-sulphur solution invariably caused damage to the fruit.

Recently, I have learned that certain Citrus Experiment Station investigators at Riverside, California, have proved that sulphur injury to citrus follows a deficiency in the metals. They demonstrated this satisfactorily by using radio active sulphur tracers and a Geiger Counter. I am, of course, immensely pleased to learn that this mystery has been solved, and that we can now place this problem among those to which we have answers.

Snow Scale:

This scale has been known in Florida for nearly seventy-five years. Its name comes from the white, waxy covering of the male scale which appears like a flake on the bark of the tree. As a general thing, it does not have a record of doing any great amount of damage to citrus trees, excepting in the area extending from Geneva, Florida, westward as far as Forest City. For some strange reason, there seems to be no other place in the state where the infestation is severe enough to cause any material injury. In the area mentioned, however, I have known this scale to kill limbs two inches in diameter, and cause great, huge split places on the larger branches. I must admit, however, that the severest injury follows the use of copper, as apparently it increases more rapidly after the use of copper than almost any other scale prevalent in this state.

Very little is known of the life history of the Snow Scale. This past season (1948-1949), the main hatch took place around the last few days in May and the first few days in June. It has been my experience that spraying at about this time is most effective in re-

ducing the infestation. If a thorough spraying is done at the right time, it will relieve the trees of the severest degree of the damage which usually results. It has also been found that spraying the insides, or centers, of the trees in October is most essential in effecting control of this insect, but I am doubtful that any single spraying can control this pest to a commercial degree.

I would suggest and recommend that the June spraying be given with an oil of 100° viscosity at a concentration of 1 1/4 %, and I would further recommend that the October spraying be given with the same kind of oil at 1 1/2 %. In this connection, it should be noted that there are records showing that the use of copper oil in March or early April, followed in June with the regular oil spray have not been at all satisfactory for Snow Scale control.

A note, perhaps, should be added as to why this scale is so difficult to control. After the eggs hatch, the crawlers settle down and insert their beaks into the bark which causes it to break away, causing a minute crack. Eventually, the sides of the bark seem almost to grow over the adult female scale. It is this condition of semi-protection by the bark of the tree which prohibits the oil from coming into direct contact with the insect. The covering of the male scale, together with the molds which develop in the excrement of the female scale, absorb the oil, further preventing its attaining maximum efficiency.



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QUALITY FRUIT NOW COMMANDS A PREMIUM

So now more than ever Florida growers are concerned with the problem of producing the largest crops of quality fruit possible at the lowest per box cost.

A great many growers throughout the great Florida citrus belt will tell you from their experiences that they are able to accomplish those results by the use of Florida Favorite Fertilizers . . . that they have been doing just that year after year.

The time for the Fall application of fertilizer is here . . . so for the purpose of keeping your trees in tip-top condition to carry their crops, to set a maximum crop of quality fruit next season and to withstand the ravages of weather and pests, we urge that you investigate the merits of Florida Favorite Fertilizers before you place your order.

Not only do Florida Favorite Fertilizers do an outstanding job because of the splendid ingredients which go into the composition of these fine products, but because our staff of Field Service Men are capable of diagnosing the needs of our customers with the utmost efficiency and accuracy.

Then, too, most of our patrons appreciate the fact that Florida Favorite Fertilizers are delivered to them when and where they want them in our own fleet of delivery trucks.

We will welcome the opportunity of discussing your fertilizer needs with you . . . absolutely without obligation.

Florida  **Favorite**
FERTILIZER, INC.

Old Tampa Road

Lakeland, Fla.

"THE FLORIDA CITRUS MUTUAL"

(Continued from Page 7)

the need for such a plan should arise. Mutual might well devote thought to such a plan for its members, so that the tools and facilities will be ready to hand when that time comes.

You will note that all my remarks have been directed towards perfecting machinery for the Florida citrus grower to use in assuring himself of a sound and profitable industry. He can only have that sort of industry in the final analysis if the price structure is satisfactory. Who really sets those prices? I quote from an article printed in farm and trade papers this past Spring:

"We must recognize, however, that neither grower, nor shipper, nor wholesaler, nor retailer 'sets' produce prices. In this, the most competitive of all businesses, prices are established in a free market by the old law of supply and demand.

"Food prices go up or down as these two factors—the market supply and the consumer demand—get out of balance with each other, one way or the other.

"Limited quantities and superior quality produce on the market shift the balance in favor of higher prices. Excessive quantities or inferior produce shift the balance toward lower prices.

What Can We Do About It?

"Fortunately, growers and distributors need not and do not leave so vital a matter affecting their welfare entirely to chance.

"Much has been done within the framework of a free, competitive market to help keep the twin factors of supply and demand in healthy balance. And much more can be done:

"Gear Production Closer to Demand, with greatest emphasis on those varieties enjoying greatest public favor.

"Effect More Orderly Marketing and equalize distribution so that peaks and valleys in the supply from day to day, and on each individual market, will be minimized.

"Improve Quality, adhere closer to good grade and pack standards, and keep inferior, unripe, and off-grade produce off the quality market.

Cut Costs both in production and distribution so as to narrow the spread between farm and retail

price, increase demand, and increase returns to growers.

"Stimulate Demand through intensive advertising, attractive produce displays, and effective point-of-sale merchandising.

"All these things call for teamwork . . . cooperation . . . working together."

So, you see, lots of people are worried by the same problems and many solutions are offered. Other ideas than those expressed here today will occur to all of us as we go along. Some will be workable and practical, others may be desirable, but impossible to attain without complete regimentation of the industry, still others may be lacking in merit. No one has the final answer, but we all have the same problem.

In announcing the list of handlers who had executed contracts with Mutual, on October 1st, A. Vernon Saurman, President of Mutual said:

"Speaking in behalf of the 6,500 grower-members of Mutual, who have exercised their legal power to organize the industry and who have stood firmly by the organization through many months and difficult situations, I express our deep appreciation to these handlers who have pledged to do their part in stabilizing markets and prices.

"It will be a welcome change in the Florida picture to have a skillful, experienced group of operators working together in a well-planned marketing program instead of continuing the ruthless competition which has proved so disastrous.

"Mutual's success will depend upon continued loyalty to the principle upon which it was founded: fairness, good will and unity among those who grow the fruit and those who market it for them as shippers, canners and concentrators."

Mr. Edward Ball, of the Florida National Group of Banks, which underwrote the first operating loan for Mutual, stated:

"The participating banks are happy to have this opportunity of serving the 6,500 growers of Florida who comprise Mutual. Florida's economy can never be well balanced with her citrus industry as sick as it has been for the past several years.

"We recognize in the creation of Mutual, an organization possessed of necessary power to stabilize the industry and its or-

derly marketing program has already produced encouraging results.

"As members of the State Bankers' Association, we have endorsed the recommendations of the Association made in behalf of Mutual while Mutual was in the formative state, both as a group and as individual banks. I definitely believe that Florida's citrus industry as now mobilized is in a position to safeguard the industry now and for the future and that Mutual is the greatest contributing factor to this improved condition."

THE FLORIDA CITRUS COMMISSION

(Continued from Page 9)

to know something about a new process for extracting citrus juices; another is interested in investing his life's savings in a grove and seeks advice and information. Quite a few people submit ideas, recipes, and sure-fire sales aids they wish to sell. Some of the most interesting letters we receive are from people commenting on the quality of our citrus fruits and products. These comments and observations cause those of us associated with the Commission to be quite conscious of the need for the industry to put great stress upon supplying consumers with quality products. We receive many letters commenting on the fine quality of our products, but we also receive some adverse comments. I think one of the biggest factors that will determine the eventual market for our frozen orange concentrate is QUALITY. Up to now quality has been good, with few complaints being received. It is my opinion that this is the principal reason for the tremendous expansion in the market for this product and we should all be a self-appointed committee of one to advocate and stress quality for all of our citrus products. The best advertising and promotion program in the world won't be much help in selling poor quality products.

The scope of activities of the Commission has expanded with the growth of the industry. When it was established in 1935, the Commission had only a few employees and the income that year was \$550,000, the production being only 29.5 million boxes. The production is now ranging close to

100 million boxes with a resultant income in excess of \$2,000,000.

The industry has been faced with the problem of marketing increasingly larger crops. This has been a problem that has been with us for many years. I believe most of you will agree that, in general, the problem has been met with success. It is true that there have been years of adversity and loss, but for the most part our groves have been a good investment. However, we can't rest on our laurels. We must continue aggressive advertising, merchandising and research programs. We must investigate and explore new ideas, new methods, new outlets. We must hold production costs to a minimum. We must do some aggressive consumer educational work. And above all we must produce good fruit and maintain a high standard of quality for our citrus products.

The Florida citrus industry does things in a big way. That is why we have weathered the economic storms in the past that have wreaked havoc among some of the other fruit industries. We must continue to do things in a big way if we are to prosper. Those of us associated with the Florida Citrus Commission are proud of the part it has played in the progress of this great citrus industry.

CITRUS INSECTS FOR NOVEMBER 1949

(Continued from Page 3)

it should always be remembered that an ounce of prevention is worth a pound of cure. Don't wait until leaf drop has started before control measures are undertaken.

Rust Mites.—Rust mite counts made in Polk County would appear to indicate that rust mites were generally increasing during October and they should be carefully watched during the month of November. Otherwise late injury may occur and fruit which would grade No. 1 in October will be rusty and no longer make grade standards. It should be noted again that rust mites are associated with the formation of greasy spot and where heavy rust mite populations are allowed to occur in November it should be expected that greasy spot and premature leaf drop will occur during the following spring.

Pumpkin Bugs.—To date no reports on pumpkin bug injury have been received. Some bugs have been noted in groves, but no in-

jury has been found. It is to be expected that a few instances of injury will occur throughout the state. We are particularly interested in observing some groves where control measures for these insects are undertaken. We would very much appreciate having word sent to us at the Citrus Experiment Station if infestations of these bugs are present which will warrant control measures.

For further information consult

the Florida Agricultural Citrus Experiment Station at Lake Alfred.

NEW 4-H CLUB IN ORANGE

A new 4-H club for girls was organized in Orange County recently, in the city of Jamajo, a subdivision of Orlando, according to Miss Sammie J. Kilgore, assistant home demonstration agent.

DUST

when you want it

the way you want it

The new X-CEL Insecticide Plant is now in operation. This modern dust plant enables us to give you better service on insecticides, fungicides and spray powders for Florida agriculture.

X-CEL NOW OFFERS

1. Better and quicker service.
2. Flexible mixing schedules.
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4. Up to the minute formulations and mixing of dusts to meet changing conditions.



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Reports Of Our Field Men . . .

SOUTHWEST FLORIDA Eaves Allison

In spite of the extra heavy rainfall, loss of plants, field damage and a generally rough start the fall vegetable crops are looking pretty good over this area. By quick action in draining off excess water, extra applications of fertilizer, extra cultivation and fast replanting where necessary, growers have managed to keep abreast of the season with pretty fair stands of good plants. The prospects look good for a profitable fall season coming up. Citrus movements have been nil to date in this area. Crops are behind last year in stage of maturity at this time, with the effects of new regulations also showing up favorably against the marketing of green fruit. The fact that some of the shippers who are most anxious to correct the green fruit evil are the most "antsy" to get their packing houses going gives an ironic twist to the situation. Like hunters early in November, they begin to get their itch. This in spite of the fact that everybody has always agreed that to keep Florida fruit off the market until it is good to eat is sensible, logical and necessary.

HILLSBOROUGH & PINELLAS COUNTIES C. S. (Charlie) LITTLE

We have had an abundance of rains during the past six weeks and as a result some groves are beginning to take on a little pale cast. We have our fall application of fertilizer under way and most growers will use a well balanced mixture. There has been some movement of grapefruit and it has been of excellent quality. A few crops of Hamlin oranges on sour root have been moved, but from an overall picture the tonnage of oranges moving to market has been extremely light. The fruit that has been moved was on a consigned basis, with practically no sales of on the tree fruit. There is no question but that we have one of the finest quality crops of fruits that this territory has produced in many years, and to keep it just that way growers have been busy keeping their rust mite and other pests under control. We do have some melanose showing on fruit but with spring weather conditions as they were it was impos-

sible to have complete control of this fungus. Growers are, in general, feeling very optimistic.

NORTH CENTRAL FLORIDA V. E. (Val) Bourland

Quite a few groves throughout this section are beginning to show that they need nitrogen and as a result many owners are starting their fall applications of fertilizer somewhat earlier than usual. Some fruit is beginning to move to market but under the new maturity laws it is difficult to find very large crops that can be picked. We had about three blooms, with the early bloom now of very nice size and quality but it is quite a job to have this fruit spot picked without getting a considerable volume of the later bloom. However, we are glad to report that the fruit moved from this section to date has been of good quality and I am sure will not be distasteful to the consuming public. Tangerines have been sizing up very nicely in recent weeks and should start moving in November. The vegetable farming deal in this territory is well under way with about the same acreage as was planted during the past few years. Fall cukes are looking very nice, pepper is growing off in good shape and there is quite a few cabbage being set.

WEST CENTRAL FLORIDA E. A. (Mac) McCartney

The general feeling of optimism prevailing at the present time is a far cry from the way we felt at this stage of the game last year. We agree that there is justification for this optimism, but we hope that we will not be disappointed in prices received during the season. There is such a thing as expecting too much, and while we are of the opinion that growers are not in this category, we do feel that with the quality fruit that we have we will receive a sufficient price to make a good profit above cost of production. Rains have been very prevalent in recent weeks and in many cases of low ground there has been damage to trees. However, quick action on the part of the growers has kept this to a minimum. Our fall application of fertilizer has just started and will be carried through December. Where early summer application was applied growers are now fertilizing, and will come

back with a liberal topdresser in the spring. Groves have been worked out in good shape as far as cultivation is concerned and most properties have been pruned to some degree.

POLK COUNTY J. M. (Jim) Sample

Groves throughout this area have had a very nice flush of growth and are in excellent condition. Trees show practically no sign of damage from the August hurricane. We are moving some fruit but nothing like the amount that we were shipping at this time last year. Of course, the new maturity regulations is responsible for part of this slow movement, but also having to do with the movement is the fact that our bloom period was thirty days later this spring than was the bloom period of a year ago. Fruit that has been shipped to date has brought satisfactory prices and while we do not look for the price to stay as high as it is now, we do anticipate fair returns. Our fertilizer program is well under way and will be completed by the middle of December. Rust mite have been unusually active for this season of the year and grove owners have been busy bringing these pests under control.

SOUTH POLK, HIGHLANDS & HARDEE COUNTIES R. L. (Bob) Padgett

We have been moving quite a volume of grapefruit from this territory, but the movement of oranges has been practically nil. Growers have been constantly testing their early oranges but in very few cases have they been up to the standards required by the new maturity laws. Prices have been good for the fruit that has been moved. The fall application of fertilizer is now being applied in ample amounts to take care of tree requirements, and in most cases sufficient secondary plant foods are being added. All groves have either been chopped or disked and are now in good condition. The vegetable crops in Istokpoga and Hardee county sections have been damaged by heavy rains in recent weeks, but growers have done an excellent job of getting the water off their field and the damage will not be as severe as was at first anticipated. There will be a somewhat larger acreage of vegetables planted at Istokpoga.

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P. O. Box 310

TAMPA, FLORIDA

Florida's Citrus Industry As Seen Through California Eyes

Last February 10, Hilton B. Richardson undertook a most interesting and unusual assignment. Primarily at the behest of farm people of the Coachella Valley, Richardson, a member of the staff of the Agricultural Extension Service in Riverside County, was sent on a 70-day trip by car to study methods of production and learn all he could about truck crop and citrus production in southeastern and Gulf states.

Sponsorship of this foraging expedition for information was sort of an informal five-way affair involving the County Board of Supervisors, Coachella Water District, Riverside County Farm Bureau, University of California and a number of interested farmers. Equipped with car, camera equipment and abundant curiosity, Richardson started out on what was to be a 12,000 mile trip, the first visit to Florida in particular in 14 years.

Summarizing his observations on Florida citrus production, Richardson listed five major points. The first, of course, is the great expansion of plantings of citrus fruits. In 1920 the citrus acreage totaled 84,000 acres; 1933, 165,000 acres; now the acreage of all citrus exceeds 400,000 acres. With about 12,000 acres of citrus coming into bearing, the acreage in 1952 is expected to reach 450,000. Production: 1920, 14 million boxes (90 lb.); 1933, 28 million boxes; 1947, 95 million boxes. In 1920, Florida produced 30 percent of the U. S. total of citrus production; in 1947, more than half.

The second point is the increased application of the results of technical research to the citrus industry. A complete reorganization of fertilizing methods, notably in the use of minor elements, has brought about a marked increase in yield per acre. On the very sandy soils of Florida citrus districts 25 to 30 percent of the cost of production is for fertilizer materials.

The third major observation is the marked increase in processing of citrus fruit in Florida. The volume of fruit processed now exceeds that sold in fresh fruit markets. In 1940-41 4 million, or one-

It is sometimes well to "see ourselves as others see us," especially if the one who does the "seeing" is engaged in the same line of business as ourselves—and if the "seeing" is done in a friendly and understanding spirit. Of course, we may be told nothing that we did not already know, but at least the outside observer views from a different angle. For this reason we are printing the following from a California observer, as told to the California Citrograph.

seventh of a 28 million box crop of oranges was processed. In 1947-48, 30 million boxes, more than one-half of a 58 million box crop, went into cans. In 1940-41, 13 million boxes of a 25 million box crop of grapefruit went to the canneries; in 1947-48, 20 million boxes of a 33 million box crop were processed.

The most significant development is frozen concentrate, the quality and convenience of which seem likely to make this new development a major factor in citrus marketing.

A fourth significant observation: There are few homes on citrus acreage. A major part of the acreage is absentee-owned. Close relationship between owner and his production and marketing problems is lacking. Much of the acreage is cared for by cooperative packing houses or by care-taking companies operating on an acreage or a percentage basis. Some of the work is skimpy because of the generally low markets in recent years, and pest control and harvesting operations are carried on just as cheaply as possible.

A fifth point is the marked increase in use of portable sprinklers, primarily as an emergency measure in drought periods. There are few rivers in Florida, some underground water under pressure, as well as innumerable lakes. Artesian wells flow in many sections, although they are less common in areas where citrus is grown.

The saving element is rain. Heavy

through September, and a shortage may be experienced from December through February. The average annual rainfall for the past 33 years has been 52.4 inches. Annual average temperature is 70.8 degrees. Maximum elevation in Florida is 324.3 feet.

Rough lemon rootstock is used generally in Florida, producing a large tree in a short time, but yielding fruit of lower grade standards from our standpoint. In the Indian River section practically all the trees are on sour orange stock, and quality of fruit is among the best in Florida.

Orlando tangelo, one of the superior early fruits, is a nintesting and preferred variety. Planting of this variety is increasing, but it has taken about 20 years for it to catch on.

Prices for canning fruit have ranged widely. Grapefruit has gone from a low of 10c (14 for seeded) to 65c a box recently. Oranges for canning have brought a low of 52c and lately have been bringing \$1.75 to \$1.85. Current season's prices have been good on good fruit, the highest in many years, due entirely to freeze damage in California and Texas this past winter. Present favorable prices seem to be but a temporary reprieve.

Cost of fruit before picking is about 48c for a 90 pound box. Pick, pack, haul, sell, runs up to \$1.25. Gross returns to Florida growers in 1947-48 were about 31c, considerably under cost of production.

Generally speaking there has been little revenue in the citrus business for the small operator in recent years, although larger operators may have fared better. The entire industry lost money last year.

"Would it be possible to grow citrus fruit primarily for canning and not go broke doing it?" we asked. "That's a pretty broad question," Richardson responded. "One outfit, at least, thinks so. A ranching concern with 400,000 acres devoted mostly to cattle range, is planting 1500 acres of citrus primarily for canning purposes."

Some strong, stable business elements have been coming into Florida in recent years, engaging in some of the truck farming, ship-

ping and citrus canning activities. The flamboyant promotional element has subsided somewhat.

Tourists, of course, are the No. 1 business in Florida, followed in importance by citrus, vegetables and livestock. Cattle raising is the only one which is relatively stable, others fluctuating rather widely from season to season depending upon economic and weather conditions. There is a strong trend toward better livestock with importation of improved breeding animals.

Florida is more generally subject to the vicissitudes of weather than most other citrus growing areas; hazards of drouth, hurricanes and frosts. The citrus industry is widespread and no calamity hits it all. There are no mountain barriers to stop cold air which may roll down from the mid-West.

Citrus spray schedules are influenced by the use to which the crop is to be put. For canning, minimum treatments are used, the endeavor being to control only those diseases and pests which may reduce yield. Fruit appearance is of no consideration. Where fruit is to be used for fresh shipment more attention is given. In recent years increasing emphasis has been placed on standardization and delivery of better fruit to market. Lately the successful organization of the Florida Citrus Mutual has given hope that more orderly marketing may be brought about.

There has been a great increase in truck transportation, the major part of the yield being carried to market by truck. Operators haul on a flat box basis or if shipments are not available they buy a load and peddle it in some northern city. In the winter many of the truckers are refugees from the cold weather.

In the Carolinas Richardson spent some time at Clemson College with Dr. Martin, where some advanced work in vegetable production and disease problems is in progress. At Charleston he visited the USDA Regional Plant Breeding Station, where problems of the eleven southern states are under study. Emphasis is placed upon plant disease problems in humid areas. Another place of interest was the Barbara Lathrop Plant Introduction gardens where many varieties of bamboo have been collected and are being tried as possible plants for hedges, windbreaks and industrial use.

In Louisiana there is little remaining citrus, although a modest

(Continued on next page)

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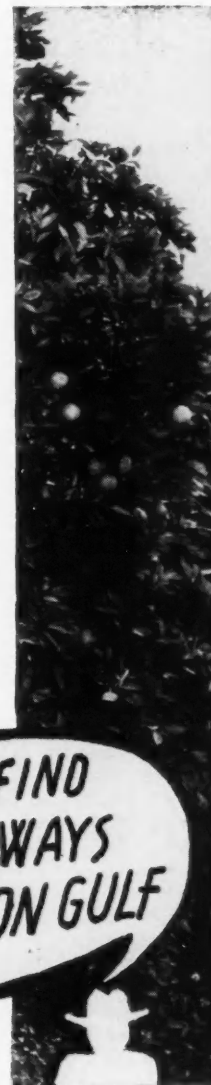
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Thirsty Orange Trees Produce Smaller Fruit

Florida citrus growers are not as dependent upon irrigation as their fellow growers in California and Texas and use a different system. However, Florida citrus growers do at times find it necessary to irrigate their groves and it may be that they may learn some facts of value by knowing more of what Texas and California growers have learned by sad experience. For that reason the following from Texas Farming and Citriculture may prove of value to readers of The Citrus Industry:

Small orange sizes have been worrying the citrus growers of Texas and California, particularly during the last five seasons, and the conclusion of numerous California research workers is that a lack of moisture from rains or irrigation is a main reason why oranges are failing to size properly. Experiments have shown that trees at the head of an irrigation run, especially a long one, yield more and larger fruit than those at the lower end. It has been learned that water distribution is definitely tied in with fruit growth.

Extensive surveys have indicated that growers have not been putting enough water on their orchards in droughty seasons. They have been warned repeatedly not to over-irrigate because this induces root trouble and chlorosis, and it now seems that they have gone to extremes in taking this advice. Apparently they have not done a thorough job in ascertaining whether or not their trees need water.

In an article on this subject in the May 21 issue of California Farmer, M. H. Kimball, Assistant Farm Advisor, Los Angeles County, makes some suggestions based on much investigation of the matter. Here is a condensation of the article.

Dry soil under your orchard trees is a threat to the crop and to the health of the trees. Soil below a depth of eighteen or twenty-four inches almost never dries out unless the roots down there have taken the water. They have needed it and suffer if they have no more.

The best way to check the trees' water supply is frequent sampling of the soil. This can be done by digging holes, of course, but work

and time is saved by using a soil auger or soil tube. A six-foot auger can be bought for \$8 or \$10; a tube will cost about \$20. Either is likely to pay for itself several times in one irrigation—and deep sampling of this kind may save your trees from dieback. A soil probe is another valuable tool. This is a piece of three-eighths inch spring-steel rod from about four to six feet long, drawn to a blunt point at one end and with a half-inch pipe crass-handle welded "T" fashion at the other end.

A probe can be put down through the soil where the water is running in the irrigation furrows. It will go only as far as the water has soaked, and so indicates how far it has penetrated. These tools, a soil tube or auger and a probe, should be as much a part of the irrigators' equipment as a shovel. Their intelligent use will tell you whether or not your soil is becoming dry and where it is dry and will inform you as to how deeply the water has penetrated. You will know how long it must run to wet the soil as far down as is needed.

In a very sandy soil with a clay or rock layer two or three feet below the surface, most of the tree roots will be confined to the top

FLORIDA'S CITRUS INDUSTRY AS SEEN THROUGH CALIFORNIA EYES

(Continued from preceding page)

acreage of tangerines and satsumas is grown.

Texas is still cleaning up the damage caused by the disastrous freeze of January 30-31, when temperatures dropped to the low 20's. Trees in most areas were in lush growth and the freeze brought real trouble. It is estimated that upwards of two million trees will be removed this year. There are some new planted areas, while certain of the older areas are fast going out of production. Many new plantings are Valencias, rather than grapefruit. The prevalent high salinity was not evident at the time of the visit, due to heavy rains and new growth on trees resulting from the freeze. Planting will necessarily be limited until improved irrigation and drainage facilities

two or three feet of soil. But in a good loam soil, citrus and avocado trees and others will send their roots down from four to eight feet, and even deeper in sandy soils not having a layer of clay or rock near the surface.

In regard to the lateral spread of the roots, it may be considered that they will reach out in all directions from the trunk about one and a half or two times the height of the tree. The root system is a sort of series of pipelines. The system starts with a great number of tiny tubes; the water they absorb from the soil is pushed into larger and larger tubes, that is, roots. The entire network centers at the base of the tree and provides water for the trunk, and on up to the leaves.

are provided. Much of the citrus land has a water table ranging from 3 to 5 feet.

Frost damage reduced the Texas crop to 5 to 10 percent of normal, according to estimates, and there is very little bloom because trees have not recovered. Aside from the recent freeze, drainage and soil salt content constitute the main citrus growing problem. The Bureau of Reclamation is planning to spend a large amount of money to correct a bad situation.

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